

# PATENT COOPERATION TREATY

JUN 13 2005

From the INTERNATIONAL SEARCHING AUTHORITY

**PCT** TETRA REX

To:

TETRA PAK  
US Intellectual Property Dept.  
Attn. Weinstein, Mitchell J.  
101 Corporate Woods Parkway  
Vernon Hills, Illinois 60061  
UNITED STATES OF AMERICA

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL SEARCH REPORT AND  
THE WRITTEN OPINION OF THE INTERNATIONAL  
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing  
(day/month/year) 06/06/2005

Applicant's or agent's file reference

TRX 0757 PCT

**FOR FURTHER ACTION** See paragraphs 1 and 4 below

International application No.

PCT/US2004/042499

International filing date  
(day/month/year)

16/12/2004

Applicant

TETRA LAVAL HOLDING & FINANCE, S.A.

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

**Filing of amendments and statement under Article 19:**

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

**When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

**Where?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes  
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.  
☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

**4. Reminders**

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until **30 months** from the priority date (in some Offices even later); otherwise, the applicant must, within **20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority



European Patent Office, P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk  
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Authorized officer

Maria Zinburgova

## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

### INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see *PCT Applicant's Guide*, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see *PCT Applicant's Guide*, Volume I/A, paragraph 296).

#### What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

#### When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

#### Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

#### How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

**The amendments must be made in the language in which the international application is to be published.**

#### What documents must/may accompany the amendments?

##### Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

**The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.**

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>TRX 0757 PCT</b>	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. <b>PCT/US2004/042499</b>	International filing date (day/month/year) <b>16/12/2004</b>	(Earliest) Priority Date (day/month/year) <b>23/02/2004</b>
Applicant <b>TETRA LAVAL HOLDING &amp; FINANCE, S.A.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☒ **Unity of invention is lacking** (see Box III).

## 4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

## 5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

## 6. With regard to the drawings,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 11

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☒ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2004/042499

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-25,30-37

A transfer unit and a drive means defined by the special design of the hub and the cars carrying the mandrels, and a drive means for moving the cars along the hub

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2. claims: 26-29

An unloader comprising a finger to unload a carton from a mandrel defined by the special design of the drive means of a finger

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**A. CLASSIFICATION OF SUBJECT MATTER**

IPC 7 B65B43/50 B65B61/18 B31B1/84 B31B5/78 B65G47/84  
B65G47/90

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B65B B31B B65G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 492 592 A (BERGHOLTZ ET AL) 20 February 1996 (1996-02-20) column 7, line 25 - column 9, line 3; figure 1	1, 16, 30, 35
A	WO 00/20194 A (TETRA LAVAL HOLDINGS & FINANCE, S.A; MOGARD, JENS) 13 April 2000 (2000-04-13) pages 7-11; figure 1	1, 16, 26, 30, 35
A	GB 920 146 A (FR. HESSER. MASCHINENFABRIK-AKTIENGESELLSCHAFT) 6 March 1963 (1963-03-06) column 6, line 41 - column 7, line 27; figures 1-3	1, 16, 30, 35
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

**\* Special categories of cited documents :**

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"8" document member of the same patent family

Date of the actual completion of the international search

9 May 2005

Date of mailing of the international search report

06.06.2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Philippon, D

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 467 238 B1 (LEES JOHN ET AL) 22 October 2002 (2002-10-22) cited in the application the whole document	1, 16, 30, 35
A	US 3 712 449 A (HOLOVNIA J,US ET AL) 23 January 1973 (1973-01-23) column 3, lines 5-30; figures	26
A	EP 0 978 471 A (SAVIO MACCHINE TESSILI S.P.A) 9 February 2000 (2000-02-09) paragraph '0026!; figures 1a,2	26

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5492592	A	20-02-1996	DE 4228181 A1	03-03-1994
			AU 666553 B2	15-02-1996
			AU 4205593 A	10-03-1994
			CA 2101891 A1	26-02-1994
			EP 0589157 A1	30-03-1994
			JP 6210735 A	02-08-1994
WO 0020194	A	13-04-2000	US 5829228 A	03-11-1998
			WO 0020194 A1	13-04-2000
			AU 9787298 A	26-04-2000
			JP 2002510256 T	02-04-2002
			US 5867966 A	09-02-1999
			US 5943840 A	31-08-1999
GB 920146	A	06-03-1963	CH 385710 A	15-12-1964
US 6467238	B1	22-10-2002	JP 2002052627 A	19-02-2002
			NO 20012937 A	17-12-2001
			US 2002144998 A1	10-10-2002
			US 2002148201 A1	17-10-2002
			US 2002134045 A1	26-09-2002
			US 2004166186 A1	26-08-2004
US 3712449	A	23-01-1973	NONE	
EP 0978471	A	09-02-2000	IT MI981819 A1	03-02-2000
			AT 234258 T	15-03-2003
			CN 1243798 A ,C	09-02-2000
			DE 69905812 D1	17-04-2003
			DE 69905812 T2	15-01-2004
			EP 0978471 A2	09-02-2000
			ES 2195509 T3	01-12-2003
			HK 1024221 A1	02-01-2004
			PT 978471 T	31-07-2003
			US 6244533 B1	12-06-2001



From the  
INTERNATIONAL SEARCHING AUTHORITY

# PCT

To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/US2004/042499

International filing date (day/month/year)  
16.12.2004

Priority date (day/month/year)  
23.02.2004

International Patent Classification (IPC) or both national classification and IPC  
B65B43/50, B65B61/18, B31B1/84, B31B5/78, B65G47/84, B65G47/90

Applicant  
TETRA LAVAL HOLDING & FINANCE, S.A.

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
Fax: +49 89 2399 - 4465

Authorized Officer

Philippon, D

Telephone No. +49 89 2399-2617



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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
  - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:
    - ☐ a sequence listing
    - ☐ table(s) related to the sequence listing
  - b. format of material:
    - ☐ in written format
    - ☐ in computer readable form
  - c. time of filing/furnishing:
    - ☐ contained in the international application as filed.
    - ☐ filed together with the international application in computer readable form.
    - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. IV Lack of unity of invention**

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1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:
- ☒ paid additional fees.
  - ☐ paid additional fees under protest.
  - ☐ not paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
  - ☒ not complied with for the following reasons:  
**see separate sheet**
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☒ all parts.
  - ☐ the parts relating to claims Nos.

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**Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, Inventive step or Industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-37
	No: Claims	
Inventive step (IS)	Yes: Claims	1-37
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-37
	No: Claims	

2. Citations and explanations

**see separate sheet**

**Re Items III and IV.**

The International Searching Authority considers that there are two groups of inventions covered by the claims:

**1) Claims 1-25,30-37**

A transfer unit and a drive means defined by the special design of the hub and the cars carrying the mandrels, and a drive means for moving the cars along the hub

**2) Claims 26-29**

An unloader comprising a finger to unload a carton from a mandrel defined by the special design of the drive means of a finger

They are not so linked as to form a single general inventive concept (Rule 13.1 PCT) for the following reasons:

The subject-matter of independent Claims 1 and 16 is a transfer unit for use with a form, fill and seal packaging machine essentially comprising a hub, a car mounted on the hub with first and second mandrels for receiving a partially erected carton, means for moving the hub around its axis and means for moving the car along the hub, wherein the hub can rotate through a series of stations, in particular from a first station at which, when the car is at a first longitudinal position a carton can be loaded on to the first mandrel, and at which, after the car has moved longitudinally a carton can be loaded on to the second mandrel, to a second station. The subject-matter of independent Claims 30 and 35 is a drive assembly for effecting the movement of the car along the hub.

The subject-matter of independent claim 25 is an unloader for use with a form, fill and seal packaging machine having a transfer unit, the unloader essentially comprising a drive connected to one of a pair of rotating elements, a belt and a finger connected to the belt for engaging a carton at an unload station and for moving the carton from the transfer unit to a turret mandrel. The transfer unit which is referred to in claim 25 is defined in general terms as being configured for receiving a partially erected carton from a first station in a

tubular form and for conveying the carton in the tubular form to a second station for moulding the closure thereon, and for conveying the carton from the second station to an unload station.

The general definition of the transfer unit as defined in claim 25 are the only features linking the two groups of inventions. These features are of basic knowledge in the art (see the documents cited in the Search Report) and cannot be considered as a common inventive concept. There is consequently not technical relationship between the respective subject-matter of the two groups of claims, because of the lack of common or corresponding "special technical features" (i.e. those features that define a contribution which each of the claimed inventions makes over the prior art) (Rule 13.2 PCT).

**Re Item V.**

**First invention (Claims 1-25,30-37)**

The nearest prior art is represented by apparatus disclosed in US 6467 238 B1. The known apparatus and method include inserting a carton into a mold station, closing the mold tools on the carton, injecting a polymer into the mold cavity to form the closure, opening the mold tool and removing the carton (with the closure molded thereon) from the mold apparatus. Nevertheless, there are many form, fill and seal machines presently in use that continue to use conventional closures. Moreover, many parts of these machine use a number of known, 'standard' carton pitches and orientations.

Accordingly, there is a need for an apparatus that permits use of a standardized molding apparatus with various different form, fill and seal packaging machines.

The transfer apparatus according to claims 1 and 16 with the drive means according to claims 30 and 36 can be "inserted" into any of a number of standard form, fill and seal machines with minimal changes required to the machine. Most desirably, such an apparatus is used without adversely impacting the overall form, fill and seal machine operation. The special design as claimed is not suggested by the prior art. The subject-matter of claims 1,16, 30 and 37 and of their respective dependent

claims thus involves an inventive step (Article 33(3) PCT).

Second invention (Claims 26-29)

Devices having an unloading function within the general meaning of claim 26 are suggested in US-A-3 712 449 or EP-A-0 978 471. The special design of the unloader as defined in claim 26 is however not suggested by the prior art. The subject-matter of claim 26 and of its dependent claims thus involves an inventive step (Article 33(3) PCT).